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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,822	11/28/2001	David Leslie Segal	Segal-2	1294

7590 07/08/2003

Law Offices of William H. Holt  
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Alexandria, VA 22314

EXAMINER

MAYEKAR, KISHOR

ART UNIT PAPER NUMBER

1753

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/994,822**

Applicant(s)  
**D. SEGAL**

Examiner  
**Kishor Mayekar**

Art Unit  
**1753**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 18-28 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Nov 28, 2001 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 09/582,986.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(e). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because the elements in the formula is not defined. Correction is required. See MPEP § 608.01(b).
2. The specification is objected because the headings introducing various paragraphs of the specification have been omitted.

The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

### Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, each of the lettered items should appear in upper case, without underling or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.

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- (b) Cross-Reference to Related Applications.
- (c) Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc (see 37 CFR 1.52(e)(5)).
- (e) Background of the Invention.
  - 1. Field of the Invention.
  - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (I) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing, if on paper (see 37 CFR 1.821-1.825).

### *Claim Objections*

- 3. Claims 18, 20, 25 and 28 are objected to because of the following informalities:
  - o in claim 18, the phrase "an carbonaceous" should be changed to --and carbonaceous--;
  - o in claim 20, the compound " $\text{La}_{1.8}\text{Ba}_{0.2}\text{CuO}_4$ " should be changed to -- $\text{La}_{1.8}\text{Ba}_{0.2}\text{CuO}_4$ --;

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o in claim 25, the compound " $\text{La}_{1.8}\text{Ba}_{0.2}\text{CuO}_4$ " should be changed to

-- $\text{La}_{1.8}\text{Ba}_{0.2}\text{CuO}_4$ --; and

o in claim 28, the compound " $\text{La}_{1.8}\text{Ba}_{0.2}\text{CuO}_4$ " should be changed to

-- $\text{La}_{1.8}\text{Ba}_{0.2}\text{CuO}_4$ --.

Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 18, 19, 23 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 18, the elements in the recited formula is not defined.

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Regarding claim 19, the phrase "the exhaust system" is lacking antecedent basis.

Regarding claim 23, the same is applied to claim 18.

Regarding claim 27, the same is applied to claim 18.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 18-21 and 23-~~28~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEKAR (6,475,350) in view of either TANG et al. (5,242,881) or GOLDEN (5,939,354). PALEKAR's invention is directed to an apparatus and a method

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of removing NO<sub>x</sub> and other pollutants from gas streams using a non-thermal plasma generated between two electrodes with a catalytic packing between the electrodes.

PALEKAR discloses in Figs. 1A and 5, the abstract and col. 8, lines 17-38 that the apparatus and method comprises all the structures and steps as claimed, respectively.

The difference between PALEKAR and the above claims is the use of the recited mixed metal oxide material. TANG shows the use of perovskite of the type recited for treating automobile exhaust gas well as for the combustion of carbon monoxide in the catalytic cracking process of petroleum refining (col.2, line 63 through col. 3, line 58 and col. 4, lines 12-22). GOLDEN shows a perovskite material of the type recited for use in carbon monoxide oxidation, hydrocarbon oxidation and nitrogen reduction (abstract and col. 1, lines 6-12). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified PALEKAR's teachings as suggested by either TANG or GOLDEN because the selection of any of known equivalent catalytic materials for the reduction of NO<sub>x</sub> and the oxidation of hydrocarbon would be within the level of ordinary skill in the art.

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8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over PALEKAR '350 as modified by TANG '881 or GOLDEN '354 as applied to claims 1-21 and 23-28 above, and further in view of BARLOW et al. (5,914,015). The difference between the references as applied above and the instant claim is the step of exciting the gas into a plasma state separate from and preceding the bed of mixed metal oxide active material. BARLOW shows in an apparatus and a method for processing exhaust gas using a plasma assisted catalyst the provision of placing two apparatus in series (Fig. 3). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by BARLOW because this would further enhance the removal of pollutants from gas stream.

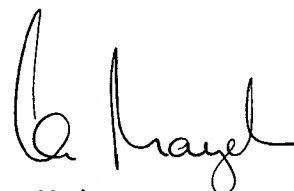
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (703) 308-0477. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on (703) 308-3322. The fax phone number for this Group is (703) 872-9310 (non-after finals) or 872-9311 (after final).



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'K Mayekar', with a stylized, cursive script.

Kishor Mayekar  
Primary Examiner  
Group 1700

KM  
June 26, 2003